

# 'Technology' for a just transition to a low-carbon energy future for SA

Presentation at National Climate Change Response Dialogue

Session 10: Transition technologies and energy choices for South Africa into the future

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# Transition to a low-carbon economy

- Long-term change – assist energy-intensive industry to transition to low-carbon economy
  - Needs more than ‘technology’ in the sense of hardware
  - Resources, behaviour, economic structure, governance
- Need a consolidated approach to low-carbon economy, framed as sustainable *development* policies
  - Shift incentives from attracting energy-intensive investments to promoting lower-carbon industries – need to change the dti’s Industrial Policy Action Plan – beyond green as an add-on, long-term: different industrial structure
  - Pathway from historically energy-intensive development path to future low-carbon economy
  - Market leader in new areas of advantage and innovation in climate-friendly technology
  - *Just* transition – also taking account of workers, communities and actors negatively affected

# We already knew in 2007

- LTMS identified four larger ‘next steps’:
  1. Energy Efficiency in all scenarios and end-use sectors (industrial, commercial, residential and transport) – able to “deliver large and smart mitigation”
  2. Electricity generation from renewable energy; and / or
  3. Nuclear power
  4. Transport – more complex package of actions
    - ☞ modal shifts in freight and passenger; technology transfer away from petrol and diesel; electric vehicles and hybrids; hydrogen cars. CCS part of the solution for both CTL and coal-based electricity – own challenges; can it scale up and work?
- So if we knew that at the end of LTMS, why have we not implemented more?
- Need more specific programmes

# Specific nationally appropriate mitigation actions (NAMAs)

- Building capacity for energy efficiency – NEEA, auditors, companies
  - Governance: mandatory EE standards
- Locally producing a technology, or components of a specific Renewable Energy Technology, becoming a market leader, e..g solar thermal electricity
  - Governance: transparent procurement for all tech's
- Decide, on a rational basis, when we need to decide about nuclear power and gas (from shale or LNG?)
  - ☞ Governance: transparent procurement for all tech's
- Electric vehicles
  - Governance: procurement of 20% of government vehicle fleet by 2020
  - Stronger incentives for low-GHG vehicles (so that they actually affect purchase patterns)
- Private to public transport – rail link from Gauteng to Durban
- Long-term and fundamental challenge (1): Urban form
  - plan for sustainable cities – e.g. denser, 'livable' walkable cities
  - National Sustainable Settlements Facility – all new social housing with SWH, EE, ceilings
- Support for SMEs that operate in 'new climate economy'

# From an energy-intensive to a climate-friendly economy

- Long-term and fundamental, challenge (2)
- A just transition from energy- and carbon-intensive development path (which is heart of our economy) to low-carbon economy
- Asking what constitutes 'living well'
- Change in industrial structure
  - Sectors that use less energy per unit of economic output
  - Create more jobs, rather than invest primarily in capital
  - Enhance knowledge
- Can we structurally alter manufacturing sector? Down-stream and side-stream linkages, not just upstream? Non-mineral manufacturing - eg textiles, electronics, ?
- While energy-intensive sectors are in transition, promote higher value-added sectors and ambitious energy efficiency targets
- Create jobs around labour-intensive sectors, e.g. efficiency, renewables



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# Background to session

- The National Development Plan envisages that, by 2030, South Africa will have an energy sector that:
  - (i) promotes economic growth and development through adequate investment in energy infrastructure, providing a reliable and efficient energy service and creating jobs;
  - (ii) social equity through expanded access to energy at affordable tariffs; and
  - (iii) environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change.
- This session will explore technologies needed to enable South Africa to balance these objectives. In the context of a growing economy, and increasing demands to reduce South Africa's GHG emissions.
- Key question:
  - What technologies are needed to enable South Africa to balance the social, economic and environmental objectives, in the context of a growing economy, and increasing demands to reduce South Africa's GHG emissions?